USSR

ABDULLAYEV, S. K., MUKHTAROV, A. I., and NADZHAFOV, I. M., Azerbaydzhan State University

"Photon Emission in Hadron Pair Production in Colliding Electron-Positron Beams"

Abstract: The annihilation of an arbitrarily polarized e^-e^+-pair in a pair of hadrons accompanied by polarized photon emission is studied. Plots corresponding to photon emission by initial leptons are considered. Even though photon emission by the created hadrons can make some contribution to the cross-section for a certain region of kinematic variables, the principal contribution is that of photon emission by light initial particles. The coefficient of asymmetry, defined as the ratio of the difference of cross-sections to their sum for parallel ($\eta\eta' = 1$) and antiparallel ($\eta\eta' = -1$) transverse spins of electron and positron, was derived. The degree of circular polarization of gamma-quanta was also presented.

1/1

UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0134023
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOTAL GLYCOSIDES OF C. HYRCANA
AT 1 MG-KG CAUSED DEATH OF ANIMALS AND AT 0.25-0.5 MG-KG REDUCED THE
CARDIAC RHYTHYM AND REINFORCED THE SYSTOLES, WITH REDN. OF THE BLOOD
PRESSURE AND DEEPENING OF RESPIRATION. THE TOTAL GLYCOSIDES ALSO
INDUCED CONTRACTION OF BLOOD VESSELS AT CONCNS. OF 1:100,000; 1:50,000;
1:25,000, A PHENOMENON WHICH INCREASED WITH CONCN.

UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--27NOV70

TITLE--EFFECT OF TOTAL CORONILLA HYRCANA GLYCOSIDES ON THE CARDIOVASCULAR
   SYSTEM -U-

AUTHOR-(02)-ABDULLAYEV, R.A., BAGIROV, R.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. MED. ZH. 1970, 47(1), 33-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, CARDIOVASCULAR DRUG, BLOOD PRESSURE,
   DRUG DOSAGE RESPONSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0218   STEP NO--UR/0488/70/047/001/0033/0036

CIRC ACCESSION NO--AP0134023

                            UNCLASSIFIED

USSR

UDC: 621.373.029.7.001.5

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972,
pp 1622-1627

statistical characteristics of multiple frequency laser radiation.

2/2

USSR

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV, A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a Laser Generating Several Axial Oscillations by the Photon Count Method"

Abstract: On the basis of the quasi-classical approximation, an analysis is made of experiments to determine the radiation statistics of a high-threshold laser, and the results are given of the measurements of photon-count statistics of several lasers operating in one transverse and several axial modes. A block diagram of the apparatus used for the photon-counting, in which an He-Ne laser operating at a wavelength of 6328 Å is the radiation source, is given together with curves for the probability distribution of the photon counts for each type of oscillation. On the same axes for each of these curves, both the Poisson and negative binomial distribution curves are plotted for the sake of comparison and show close agreement. Results of the experiments demonstrate the effectiveness of the photon count for studying the

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USSR

BABAYEV, B., et al., Khimiya Prirodnykh Soyedineniy, No 3, 1973, p 445

ammonia in 92% ethyl alcohol. The alcohol eluate is condensed and the aqueous
residue of 3-3.5 liters is acidified with 20% sulfuric acid, triply filtered
and washed with chloroform. The washed acid solution is alkalized with 25%
ammonia, and the alkaloids are extracted with chloroform. The condensed and
dried chloroform extract is dissolved in acetone with heating, activated
charcoal is added, and the solution is condensed until the solvent is totally
removed after filtering. The residue is 52.4 g of fine yellow crystals.

2/2

- 1 -

Burn Studies

ABDULLAYEV, V. M., Professor, Institute of Roentgenology and Radiology, Minis-
try of Health, Azerbaydzhan SSR

"Pathomorphological Changes in the Eyes of Irradiated Animals With Chemical
Burns"

Abstract: Four series of experiments were run: in the first series 100 eyes
of 55 rabbits were studied for morphological changes after a single exposure
to radiation in a dose of 798 r for 42 min. Clinical as well as hematological
radiation injuries were observed after the eighth day. Parabiomicroscopic and
opthalmological studies indicated the presence of photophobia, lacrimation,
hyperemia conjunctivitis of the eyelid and eyeball, and edema of the cornea.
In some cases, infiltration and ulcer of the cornea were observed. The first
test series showed profound changes in the irradiated eye. In the second test
series with 15 rabbits, the effect of chemical burns caused by 10 percent
NH_4OH) on the eye was studied. Within the first minute after exposure to the
chemical, hyperemia, conjunctivitis of the eyeball and eyelid were observed.
Subsequently, the animals could hardly open the eyelids. After 1-2 weeks the

1/2

USSR

ABDULLAYEV, S. V., Vopr. kibernet. i vychisl. matem., Tash... , " ",
1969, No 30, pp 118-126

on the surface of the cylinder. The parameters of the m... ...
infinity. Under the assumption that the shear modulus of t... ...
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the solution of the problem is constructed with the aid of a ...
Laplace transformation in time. The index of the Bessel fun... ... ...
function of the index of the homogeneous medium. Rever... of t... ...
tained is then fulfilled for an index equal to an integer pl... ... ...
An exact solution of the problems is obtained for a linear and exp... ...
law of the motion of cylinders. The computational results are given in the
form of graphs and illustrate the effect of inhomogeneity on the comp...ts
of the stress-deformation state of the medium. P. F. Sabodash.

2/2

USSR

ABDULLAYEV, S. V.

"On the Motion of Cylinders in an Inhomogeneous Elastic Medium"

V sb. Vopr. kibernet. i vychisl. matem. (Problems of Cybernetics and Computer Mathematics -- Collection of Works), Tashkent, "Fan", 1969, No 35, pp 118-126 (from RZh-Mekhanika, No 5, May 70, Abstract No 5V146)

Translation: The problem of the rotational and translational motion of an infinite circular absolutely solid cylinder of finite radius in an infinite linearly elastic inhomogeneous isotropic medium is solved in the linear approximation. Displacements and deformations are assumed to be small. The wave motion in the homogeneous medium surrounding the cylinder is excited by the sudden longitudinal-translational motion of the cylinder in the direction of its generatrix or by the rotational motion along its axis. The problem is one-dimensional. The equations describing one-dimensional motion of the elastic inhomogeneous medium are integrated in a region outside the cylinder under null initial conditions. Conditions of "rigid contact", particles touching the surface of the cylinder move along with it, are fulfilled

1/2

CIRC ACCESSION NO--AT0133552
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIATION SCATTERING IS
THEORETICALLY STUDIED OF NEUTRINOS BY LEPTONS (NAMELY E PRIME NEGATIVE),
THE POLARIZATION OF PARTICLES BEING TAKEN INTO ACCOUNT. EXPLICIT
EQUATIONS ARE FOUND FOR DIFFERENTIAL CROSS SECTION OF THE SCATTERING
PROCESS, ANGULAR AND ENERGY DISTRIBUTION OF E, AND DEGREE OF BOTH
CIRCULAR AND LINEAR POLARIZATION OF GAMMA-QUANTUM.   FACILITY:
AZERB. GOSUNIV. IM. KIROVA, BAKU, USSR.

UNCLASSIFIED

TITLE--RADIATION SCATTERING OF NEUTRINOS BY LEPTONS -U-

AUTHOR-(03)-MUKHTAROV, A.I., NADZHAFOV, I.M., ABDULLAYEV, S.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(4), 69-73

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SCATTERING CROSS SECTION, PARTICLE INTERACTION, NEUTRINO,
   ELECTRON INTERACTION, ANGULAR DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1647   STEP NO--UR/0139/70/013/004/0069/0073

CIRC ACCESSION NO--AT0133552
                           UNCLASSIFIED

USSR

ABDULLAYEV, S. K., MUKHTAROV, A. I., and NADZHAFOV, I. M., Azerbaydzhan State University

"Photon Emission in Hadron Pair Production in Colliding Electron-Positron Beams"

Abstract: The annihilation of an arbitrarily polarized e^-e^+-pair in a pair of hadrons accompanied by polarized photon emission is studied. Plots corresponding to photon emission by initial leptons are considered. Even though photon emission by the created hadrons can make some contribution to the cross-section for a certain region of kinematic variables, the principal contribution is that of photon emission by light initial particles. The coefficient of asymmetry, defined as the ratio of the difference of cross-sections to their sum for parallel ($\eta \eta' = 1$) and antiparallel ($\eta \eta' = -1$) transverse spins of electron and positron, was derived. The degree of circular polarization of gamma-quanta was also presented.

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- 86 -

CIRC ACCESSION NO--AP0134023
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  AT 1 MG-KG CAUSED DEATH OF ANIMALS AND AT 0.25-0.5 MG-KG REDUCED THE
  CARDIAC RHYTHYM AND REINFORCED THE SYSTOLES, WITH REDN. OF THE BLOOD
  PRESSURE AND DEEPENING OF RESPIRATION. THE TOTAL GLYCOSIDES ALSO
  INDUCED CONTRACTION OF BLOOD VESSELS AT CONCNS. OF 1:100,000; 1:50,000;
  1:25,000, A PHENOMENON WHICH INCREASED WITH CONCN.

UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--27NOV70

TITLE--EFFECT OF TOTAL CORONILLA HYRCANA GLYCOSIDES ON THE CARDIOVASCULAR
   SYSTEM -U-

AUTHOR-(02)-ABDULLAYEV, R.A., BAGIROV, R.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. MED. ZH. 1970, 47(1), 33-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, CARDIOVASCULAR DRUG, BLOOD PRESSURE,
   DRUG DOSAGE RESPONSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0218   STEP NO--UR/0488/70/047/001/0033/0036

CIRC ACCESSION NO--AP0134023
                              UNCLASSIFIED

ILLEGIBLE

UDC: 621.

USSR

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV, A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a Laser Generating Several Axial Oscillations by the Photon Count Method"

Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an analysis is made of experiments to determine the radiation statistics of a high-threshold laser, and the results are given of the measurements of photon-count statistics of several lasers operating in one transverse and several axial modes. A block diagram of the apparatus used for the photon-counting, in which an He-Ne laser operating at a wavelength of 6328 Å is the radiation source, is given together with curves for the probability distribution of the photon counts for each type of oscillation. On the same axes for each of these curves, both the Poisson and negative binomial distribution curves are plotted for the same of comparison and show close agreement. Results of the experiments demonstrate the effectiveness of the photon count for studying the

1/2   - 34 -

USSR

BABAYEV, B., et al., Khimiya Prirodnykh Soyedineniy, No 3, 1973, p 445

ammonia in 92% ethyl alcohol. The alcohol eluate is condensed and the aqueous
residue of 3-3.5 liters is acidified with 20% sulfuric acid, triply filtered
and washed with chloroform. The washed acid solution is alkalized with 25%
ammonia, and the alkaloids are extracted with chloroform. The condensed and
dried chloroform extract is dissolved in acetone with heating, activated
charcoal is added, and the solution is condensed until the solvent is totally
removed after filtering. The residue is 52.4 g of fine yellow crystals.

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USSR

Alkaloids

USSR

BABAYEV, B., ABDULLAYEV, P., SHAKIROV, T. T., "Order of the Red Banner of Labor" Institute of the Chemistry of Plant Materials

"Isolation of Alkaloids From the Seeds of Haplophyllum Perforatum by the Ion-Exchange Method"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 3, 1973, p 445

Translation: In view of the tranquilizing, antispasmodic and anesthetic properties of alkaloids from seeds of Haplophyllum perforatum, it has been felt necessary to develop a method of extracting these alkaloids. The authors propose an ion exchange method of isolating the alkaloid sum from the seeds of H. perforatum which utilizes weak aqueous solutions of mineral acids (0.5-1%). The procedure involves loading 10 kg of pulverized seeds into a 50-liter extractor, and applying continuous extraction with a 1% solution of sulfuric acid. The acid solution of alkaloids is passed through an adsorber containing 3 kg of KU-1 cation exchange resin in the H-form. The extractant flowrate is 500-550 liters/hr/m^2. After complete extraction of the alkaloids the adsorber is washed with water and the alkaloids are desorbed with a 1.5% solution of

1/2

CIRC ACCESSION NO--AP0127331

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WERE PERFORMED IN RATS
  POISONED WITH THE SEEDS OF A PLANT, TRICHODESMA. THERE WAS A GRADUAL
  REDUCTION OF TOTAL LIPID, BETA-LIPOPROTEID AND PHOSPHOLIPID CONTENT IN
  THE SERUM. CHOLESTEROLIFYING FUNCTION OF THE LIVER WAS ALSO DISTURBED.
  NO FATTY DYSTROPHY OF THE LIVER DEVELOPED.   FACILITY:
  LABORATORIYA EKSPERIMENTAL'NOY GASTROENTEROLOGII INSTITUTA KRAYEVOY
  MEDITSINY, TASHKENT.

UNCLASSIFIED

TITLE--CHARACTERISTICS OF SOME INDICES OF FAT LIPID METABOLISM IN
   EXPERIMENTAL TRICHODESMOTOXICOSIS -U-

AUTHOR-(02)-ABDULLAYEV, N.KH., AZIMOV, R.K.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
   VOL 14, NR 3, PP 34-36

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, POISON EFFECT, BLOOD SERUM, LIPID
   METABOLISM, LIPOPROTEIN, PHOSPHOLIPID, CHOLESTEROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1930   STEP NO--UR/0396/70/014/003/0034/0036

CIRC ACCESSION NO--AP0127331
                         UNCLASSIFIED

USSR

ABDULLAYEV, the late N. A., and MUMINOV, K. S., Izvestiya Akademii Nauk
Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1972, pp 3-7

form $A_1(x, y) = \sum\limits_{k=n}^{\infty} A_1^{(k)}(x, y)$, where $A_1^{(k)}(x, y)$ are forms of degree
$k \geqslant 2$ and $A_1^{(n)}(x, y) \not\equiv 0$, with no linear terms in expansions (the case of a
singular point of higher order). Singular points of the differential equation

$$r^2 \tilde{A}_1(r, \varphi)\, dr^2 + 2\tilde{A}_2(r, \varphi)\, dr d\varphi + \tilde{A}_3(r, \varphi)\, d\varphi^2 = 0$$

situated on the φ-axis are found, and a differential equation is given for
finding the direction of tangents to the curve $D(x,y) = 0$.

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UDC 517.922

USSR

ABDULLAYEV, the late N. A., and MUMINOV, N. S., Samarkand Cooperative Institute imeni V. V. Kuybyshev

"On the Structure of the Neighborhood of a Singular Point of a First-Order, Second-Degree Differential Equation Unsolved With Respect to a Derivative"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1972, pp 3-7

Abstract: The article studies the character of a singular point of higher order of the second-degree differential equation

$$A_1(x,\,y)\,dx^2 + 2A_2(x,\,y)\,dx\,dy + A_3(x,\,y)\,dy^2 = 0$$

in the case where the functions $A_i\;(x,y)\;(i = 1,\,2,\,3)$ are representable in the

1/2

USSR

ABDULLAYEVA, N. S., LBOV, G. S.

"Selection of Significant Characteristics for Diagnosis of Congenital Heart Defects"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 51, Tashkent, 1972, pp 88-93 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V717, by the authors).

Translation: A method of random search adapted for the M-220 computer is used to develop the most informative characteristics for recognition of certain types of congenital heart defects.

1/1   - 112 -

M., Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 47, No 6, Jun 70,

sided. In the third series of tests with 15 rabbits after irradia-
ι eyes one eye of each rabbit was treated with 10 percent ammonia
observe the combined effects of irradiation and the chemical. All
are more pronounced in the eyes subjected to both treatments and
_____, took place more slowly.

In the fourth test series, both eyes of the test animal were irradiated and
then treated with the chemical. Some of the animals perished. Pronounced
changes took place in the eyes; however, these were not of equal magnitude in
both eyes. Secondary infections, such as various inflammations, were observed.
The recovery period begins at the end of the fourth week and lasts through the
sixth and seventh weeks.

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Burn Studies

USSR

ABDULLAYEV, V. M., Professor, Institute of Roentgenology and Radiology, Minis-
try of Health, Azerbaydzhan SSR

UDC 616-001.28-092.9:611.84-018

"Pathomorphological Changes in the Eyes of Irradiated Animals With Chemical
Burns"

Abstract: Four series of experiments were run: In the first series 100 eyes
of 55 rabbits were studied for morphological changes after a single exposure
to radiation in a dose of 798 r for 42 min. Clinical as well as hematological
radiation injuries were observed after the eighth day. Parabiomicroscopic and
opthalmological studies indicated the presence of photophobia, lacrimation,
hyperemia conjunctivitis of the eyelid and eyeball, and edema of the cornea.
In some cases, infiltration and ulcer of the cornea were observed. The first
test series showed profound changes in the irradiated eye. In the second test
series with 15 rabbits, the effect of chemical burns caused by 10 percent
NH_4OH) on the eye was studied. Within the first minute after exposure to the
chemical, hyperemia, conjunctivitis of the eyeball and eyelid were observed.
Subsequently, the animals could hardly open the eyelids. After 1-2 weeks the
1/2

USSR

ABDULLAYEV, S. V., Vopr. kibernet. i vychisl. matem., Tashkent, "Fan",
1969, No 30, pp 118-126

on the surface of the cylinder. The parameters of the motion determined at
infinity. Under the assumption that the shear modulus of the elastic medium
is a power function of distance and the density of the material is a constant,
the solution of the problem is constructed with the aid of a one-sided
Laplace transformation in time. The index of the Bessel functions are then a
function of the index of the homogeneous medium. Reversal of the images ob-
tained is then fulfilled for an index equal to an integer plus one-half.
An exact solution of the problems is obtained for a linear and exponential
law of the motion of cylinders. The computational results are given in the
form of graphs and illustrate the effect of inhomogeneity on the components
of the stress-deformation state of the medium. P. F. Sabodash.

2/2

USSR

ABDULLAYEV, S. V.

"On the Motion of Cylinders in an Inhomogeneous Elastic Medium."

V sb. Vopr. kibernet. i vychisl. matem. (Problems of Cybernetics and Computer Mathematics -- Collection of Works), Tashkent, "Fan", 1969, No 34, pp 118-126 (from RZh-Mekhanika, No 5, May 70, Abstract No 5V104)

Translation: The problem of the rotational and translational motion of an infinite circular absolutely solid cylinder of finite radius in an infinite linearly elastic inhomogeneous isotropic medium is solved in the linear approximation. Displacements and deformations are assumed to be small. The wave motion in the homogeneous medium surrounding the cylinder is excited by the sudden longitudinal-translational motion of the cylinder in the direction of its generatrix or by the rotational motion along its axis. The problem is one-dimensional. The equations describing one-dimensional motion of the elastic inhomogeneous medium are integrated in a region outside the cylinder under null initial conditions. Conditions of "rigid contact", particles touching the surface of the cylinder move along with it, are fulfilled

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1/2   014   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--RADIATION SCATTERING OF NEUTRINOS BY LEPTONS -U-

AUTHOR-(03)-MUKHTAROV, A.I., NADZHAFOV, I.M., ABDULLAYEV, S.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCH 3. ZAVED., FIZ. 1970, 13(4), 69-73

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SCATTERING CROSS SECTION, PARTICLE INTERACTION, NEUTRINO,
 ELECTRON INTERACTION, ANGULAR DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1647   STEP NO--UR/0139/70/013/004/0069/0073

CIRC ACCESSION NO--AT0133552
                        UNCLASSIFIED

USSR

ABDULLAYEV, S. K., MUKHTAROV, A. I., and NADZHAFOV, I. M., Azerbaydzhan State University

"Photon Emission in Hadron Pair Production in Colliding Electron-Positron Beams"

Abstract: The annihilation of an arbitrarily polarized e^-e^+-pair in a pair of hadrons accompanied by polarized photon emission is studied. Plots corresponding to photon emission by initial leptons are considered. Even though photon emission by the created hadrons can make some contribution to the cross-section for a certain region of kinematic variables, the principal contribution is that of photon emission by light initial particles. The coefficient of asymmetry, defined as the ratio of the difference of cross-sections to their sum for parallel ($\eta\eta' = 1$) and antiparallel ($\eta\eta' = -1$) transverse spins of electron and positron, was derived. The degree of circular polarization of gamma-quanta was also presented.
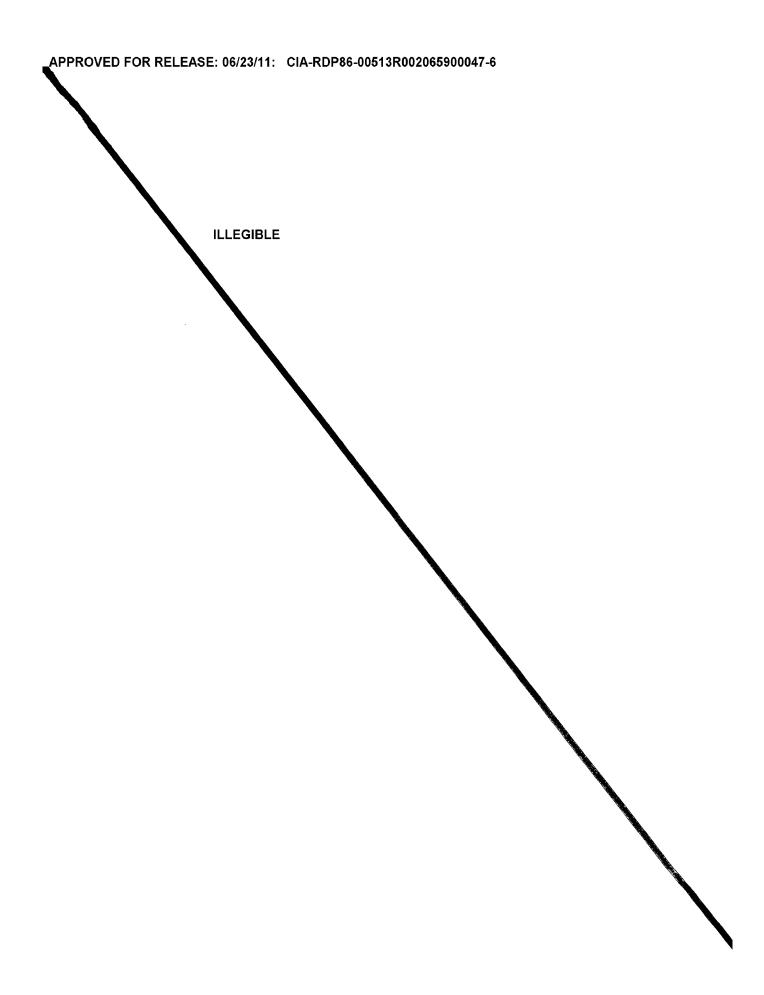
1/1

- 86 -

UDC:539.12.173

USSR

ABDULLAYEV, R.S., GURVICH, L.G., ZAKHAROV, G.E., POLYAK, YU.V. and SKRIPNIKOV, YU.S.

"Experimental Determination of Energy Release due to Radiation in Certain Construction Materials"

Tashkent, Sb. Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh (Symposium on Dosimetry and Radiation Processes in Dosimetric Systems), 1972, pp 197-200 (from Referationyy Zhurnal-Yadernyye Reaktory, 1973, Abstract No 3.50.78)

Translation: Investigation results are presented on static temperature distribution inside a sphere located in the radiation field of a reactor, specific heat release for various metals was determined. Calculation of specific heat release was based on the assumption of uniform and exponential distribution of heat release sources through the depth of the material. Measurement of temperature field inside the sphere provided data on absorption on gamma-radiation by lead. 1 illustration. 2 references.

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ILLEGIBLE

UDC.

USSR

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAID,
A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a
Laser Generating Several Axial Oscillations by the Photon Count
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Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an
analysis is made of experiments to determine the radiation sta-
tistics of a high-threshold laser, and the results are given of
the measurements of photon-count statistics of several lasers
operating in one transverse and several axial modes. A block dia-
gram of the apparatus used for the photon-counting, in which an
He-Ne laser operating at a wavelength of 6328 Å is the radiation
source, is given together with curves for the probability distri-
bution of the photon counts for each type of oscillation. On the
same axes for each of these curves, both the Poisson and negative
binomial distribution curves are plotted for the sake of compari-
son and show close agreement. Results of the experiments demon-
strate the effectiveness of the photon count for studying the

- 34 -

1/2

TITLE--EFFECT OF TOTAL CORONILLA HYRCANA GLYCOSIDES ON THE CARDIOVASCULAR
    SYSTEM -U-

AUTHOR-(02)-ABDULLAYEV, R.A., BAGIROV, R.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. MED. ZH. 1970, 47(1), 33-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, CARDIOVASCULAR DRUG, BLOOD PRESSURE,
    DRUG DOSAGE RESPONSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0218   STEP NO--UR/0488/70/047/001/0033/0036

CIRC ACCESSION NO--AP0134023
                    UNCLASSIFIED

USSR

BABAYEV, B., et al., Khimiya Prirodnykh Soyedineniy, No 3, 1973, p 445

ammonia in 92% ethyl alcohol. The alcohol eluate is condensed and the aqueous
residue of 3-3.5 liters is acidified with 20% sulfuric acid, triply filtered
and washed with chloroform. The washed acid solution is alkalized with 25%
ammonia, and the alkaloids are extracted with chloroform. The condensed and
dried chloroform extract is dissolved in acetone with heating, activated
charcoal is added, and the solution is condensed until the solvent is totally
removed after filtering. The residue is 52.4 g of fine yellow crystals.

2/2

- 1 -

USSR

Alkaloids

USSR

UDC: 547.944/945

BABAYEV, B., ABDULLAYEV, P., SHAKIROV, T. T., "Order of the Red Banner of Labor" Institute of the Chemistry of Plant Materials

"Isolation of Alkaloids From the Seeds of Haplophyllum Perforatum by the Ion-Exchange Method"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 3, 1973, p 445

Translation: In view of the tranquilizing, antispasmodic and anesthetic properties of alkaloids from seeds of Haplophyllum perforatum, it has been felt necessary to develop a method of extracting these alkaloids. The authors propose an ion exchange method of isolating the alkaloid sum from the seeds of H. perforatum which utilizes weak aqueous solutions of mineral acids (0.5-1%). The procedure involves loading 10 kg of pulverized seeds into a 50-liter extractor, and applying continuous extraction with a 1% solution of sulfuric acid. The acid solution of alkaloids is passed through an adsorber containing 3 kg of KU-1 cation exchange resin in the H-form. The extractant flowrate is 500-550 liters/hr/m^2. After complete extraction of the alkaloids the adsorber is washed with water and the alkaloids are desorbed with a 1.5% solution of

1/2

CIRC ACCESSICN NO--AP0127531

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WERE PERFORMED ON RATS
  POISONED WITH THE SEEDS OF A PLANT, TRICHODESMA. THERE WAS A GRADUAL
  REDUCTICN OF TOTAL LIPID, BETA-LIPOPROTEID AND PHOSPHOLIPID CONTENT IN
  THE SERUM. CHOLESTEROLIFYING FUNCTION OF THE LIVER WAS ALSO DISTURBED.
  NO FATTY DYSTROPHY OF THE LIVER DEVELOPED.   FACILITY:
  LABCRATCRIYA EKSPERIMENTAL'NOY GASTROENTEROLOGII INSTITUTA KRAYEVOY
  MEDITSINY, TASHKENT.

1/2   026   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CHARACTERISTICS OF SOME INDICES OF FAT LIPID METABOLISM IN
   EXPERIMENTAL TRICHODESMOTCXICOSIS -U-
AUTHOR-(02)-ABDULLAYEV, N.KH., AZIMOV, R.K.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
   VOL 14, NR 3, PP 34-36
DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, POISON EFFECT, BLOOD SERUM, LIPID
   METABOLISM, LIPOPROTEIN, PHOSPHOLIPID, CHOLESTEROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1930   STEP NO--UR/0396/70/014/003/0034/0036

CIRC ACCESSICN NO--AP0127331
                         UNCLASSIFIED

USSR

ABDULLAYEV, the late N. A., and MUMINOV, N. S., Izvestiya Akademii Nauk
Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1972, pp 3-7

form $A_1 (x, y) = \sum\limits_{k=n}^{\infty} A_1^{(k)} (x, y)$, where $A_j^{(k)} (x, y)$ are forms of degree
$k \geqslant 2$ and $A_1^{(n)} (x, y) \neq 0$, with no linear terms in expansions (the case of a
singular point of higher order). Singular points of the differential equation

$$r^2 \widetilde{A}_1 (r, \varphi) dr^2 + 2\widetilde{A}_2 (r, \varphi) dr d\varphi + \widetilde{A}_3 (r, \varphi) d\varphi^2 = 0$$

situated on the φ-axis are found, and a differential equation is given for
finding the direction of tangents to the curve $D(x,y) = 0$.

2/2

USSR   UDC 517.922

ABDULLAYEV, the late N. A., and MUMINOV, N. S., Samarkand Cooperative Institute Imeni V. V. Kuybychev

"On the Structure of the Neighborhood of a Singular Point of a First-Order, Second-Degree Differential Equation Unsolved With Respect to a Derivative"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1972, pp 3-7

Abstract: The article studies the character of a singular point of higher order of the second-degree differential equation

$$A_1(x,\ y)\,dx^2 + 2A_2(x,\ y)\,dx\,dy + A_3(x,\ y)\,dy^2 = 0$$

in the case where the functions $A_i\ (x,y)\ (i = 1,\ 2,\ 3)$ are representable in the

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USSR

ARIFOV, U. A., et al, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-
Matematicheskikh Nauk, No 5, 1970, p 41-44

illumination of 3×10^5 lux. Dark resistance is between 10^{11} and 10^{13} ohms.
Electron bombardment of films affected their voltage characteristics. The
voltage decreases sharply at first, then gradually. With beams of 1.5 to 2 kev
photovoltage disappears and resistance decreases. Apparently, electron irradia-
tion dissociates oxide inclusions in the material, and photovoltage entirely
disappears when this dissociation is complete. Exposure of the films to air
restores the photovoltage when the dissociated inclusions are stabilized. Orig.
art. has 2 figs., 2 tables, and 11 refs.

2/2

USSR   UDC 539.216.22:546.28+535.215

ARIFOV, U. A., ABDULLAYEV, N., and AYUKHANOV, A. Kh., Institute of Electronics
Acad. of Sci. Uzbek SSR)

"Photoelectric Effect in Thin Films of Germanium and the Action of Electronic
Bombardment"

Abstract: A method is described for obtaining germanium films for generating
high photovoltages. The films were vacuum deposited on glass and quartz sub-
strates. The evaporation vessels were heated to 1100-1200°C. The films, 0.1 to
0.3 micron thick, were cooled to 20°C in vacuum, fitted with silver or a quadag
contacts, and tested at both room temperature and liquid nitrogen temperature.
The photovoltage generated in the germanium films was independent of the sub-
strates and was always larger in air than in vacuum at room temperature, but at
liquid nitrogen temperature it can be larger or smaller. Polarity remained con-
stant at all temperatures, in air and vacuum, and with direct illumination or
illumination through the substrate. The maximum voltage of 410 v/cm at room
temperature and 1100 v/cm at liquid nitrogen temperature was obtained with an
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USSR

ARIFOV, U. A. et al., Fizika i Tekhnika Poluprovodnikov, No 9, 1971, pp 1687-1690

relatively low radiation doses. This is accompanied by a sharp reduction in impedance. It is found that ion bombardment destroys certain volumes of the layer on the films. This destruction may be structural or may result from a change in the composition of the film due to the injection of primary ions, selective vaporization and dissociative processes.

2/2

USSR   UDC   621.315.592

ARIFOV, U. A., ABDULLAEV, ~~~~~~~~, AYUKHANOV, A. Sh., Institute of Electronics, Academy of Sciences of the Uzbek SSR, Tashkent

"Effect of Ion Bombardment on the Photoelectric Properties of Silicon and Germanium Films Which Generate High Photovoltages"

Leningrad, <u>Fizika i Tekhnika Poluprovodnikov</u>, Vol 5, No 9, Sep 71, pp 1687-1690

Abstract: The authors study the effect of ion bombardment on the photoelectric properties of thin films of silicon and germanium which generate anomalously high photovoltages when exposed to light. It is found that bombardment of such films with alkali ions causes an appreciable change in photovoltage and impedance. Irradiation by ions with an energy of 50-1500 eV on a thick section reduces generated photovoltages, while irradiation on a thin section increases these voltages. At the same time, the impedance of these films decreases on all sections. When the films are bombarded by ions with energies of more than 1 keV, the generated photovoltage disappears completely on all sections at

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USSR

ABDULLAYEV, N. et al., Izvestiya Akademii Nauk UzSSR, Seriya Fiziko-
-Matematicheskikh Nauk, No 2, 1973, pp 34-36

doses of up to 10^4 µcb/cm^2. When the primary electron energy is increased
past 2 kev for silicon and 100 ev for germanium, V decreases even more,
there is a noticeable reduction in R, and V and R do not recover their
initial values in a vacuum. When the films are held in air, there is a
gradual increase in V and R. At primary electron energies of more than
5 kev for silicon and 500 ev for germanium, V disappears and R is reduced
by 2-3 orders of magnitude. A physical interpretation is given for the
mechanism responsible for the observed effects.

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USSR

UDC: 539.216.22:546.28+535.215

ABDULLAYEV, N., AYUKHANOV, A. Kh., ARIFOV, U. A., Institute of Electronics of the Academy of Sciences of the Uzbek SSR

"Influence of Electron Bombardment on the Anomalous Photovoltage Effect in Germanium and Silicon Films"

Abstract: The authors study the effect of electron bombardment on the photoelectric characteristics of semiconductor films which generate anomalously high photovoltages. The primary electron energy was up to 10 kev with a beam density of 1 $\mu a/cm^2$. The bombardment was done and the measurements were made in a vacuum of 10^{-6} mm Hg. The change in the generated photovoltage V and resistance R was measured separately in each of five sections of 2 mm length on the specimens. It was found that electron bombardment decreases V considerably for critical energies of up to about 2 kev for silicon films and up to about 100 ev for germanium. The recovery time for V increases with electron energy and radiation dose. There was no appreciable reduction in R for the given energy range at

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TITLE--ANOMALOUSLY HIGH PHOTOVOLTAGE IN SILICON FILMS AT LIQUID NITROGEN
   TEMPERATURE -U-

AUTHOR-(03)-ARIFOV, U.A., ABDULLAYEV, N., AYUKHANOV, A.KH.

CCUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZB. SSSR, SER. FIZ.-MAT. NAUK 1970, 14(1), 43-4

DATE PUBLISHED------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--PHOTO EMF, SILICON FILM, LIQUID NITROGEN, VOLT AMPERE
   CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1141   STEP NO--UR/0166/70/014/001/0043/0044

CIRC ACCESSICN NO--AP0124796
                         UNCLASSIFIED

USSR

A

SEIDOV, YU. M., ABDULLAYEV, M. M., Institute of Physics

"Two-Magnon Absorption in Complex Magnetoordered Crystals"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol. ?, No 3, 1970, pp 11-14

Abstract: The article considers the influence of spin-phonon and dipole-dipole interaction on two-magnon absorption processes in complex magnetoordered crystals, particularly ferrites.

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USSR

earlier was found at room temperature. At energies exceeding the energy of the first peak by 40-50 millielectron volts, the experimental points lie on the straight lines

$$(Kh\nu)^2 = A^2(T)[h\nu - \epsilon_g(T)],$$

where $A_{4.2°K} = A_{77°K} = 1.12 \cdot 10^5$, $A_{300°K} = 1.02 \cdot 10^5$ electron volts$^{1/2}$/cm, and ϵ_g is 1.430 ± 0.001 electron volts at 300° K, 1.513 ± 0.001 electron volts at 77° K and 1.521 ± 0.001 electron volts at 4.2° K. The data are compared with experiments performed by various authors earlier.

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USSR

SEYSYAN, R. P., ABDULLAYEV, M. A., ZAKHARCHENYA, B. P.

"Exciton Structure of the Fundamental Absorption Edge and Oscillating Magneto-absorption in Gallium Arsenide Crystals"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 405-410

Abstract: A study was made of the structure of the fundamental absorption edge in "pure" gallium arsenide and obtaining the oscillating magnetoabsorption spectrum in it. The applicability of the conclusions of the role of exciton states in the formation of the spectrum drawn earlier when studying germanium crystals [R. P. Seysyan, et al., FTP, No 2, 1266, 1968; R. P. Seysyan, Author's Review of Candidate's Dissertation, Leningrad, 1969] was investigated. Epitaxial n-type GaAs crystals having a free carrier concentration on the order of $n = 10^{14}$ cm^{-3} and $\mu_{77°K} = (60-100) \cdot 10^3$ cm^2/volt-sec were used in the investigation. A figure is presented showing the absorption coefficient as a function of the photon energy for GaAs crystals at different temperatures in the coordinates $(Kh\nu)^2$-$h\nu$ rectifying the root dependence on energy characteristic of direct allowable transitions. In addition to the first sharp peak observed previously in gallium arsenide at low temperatures, a weak peak ~3.5 millielectron volts from the other is observed. One obvious peak not observed

1/2

USSR   UDC 547.754;542.944.1

KOST, A. N., YUDIN, L. G., BUDYLIN, V. A., and ABDULLAYEV, M., Moscow State
University imeni M. V. Lomonosov

"Indole Chemistry. XXV. Bromination of the Benzene Ring of Alkylindoles"

Abstract: The effect of bromination of the benzene ring of eight alkyl-indoles
was studied. The reaction was carried out in concentrated H_2SO_4 (in the presence
of Ag_2SO_4, to assure protonizing of the pyrrole part of the molecule and
facilitate formation of the bromine cation). Paramagnetic-resonance, infrared
and mass spectra were obtained to determine the structure of the eight substituted
compounds. It was found that indoles with alkyl groups in the pyrrole ring
are brominized in position 5, while introduction of an alkyl in position 7 may
alter the orientation and lead to formation of a 6-isomer.

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USSR

ABDULLAYEV, Kh. Sh., and TRUKHANOV, G. Ya.

"Neutron Relaxation in Matter"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR--Seriya Fiziko-tekhni-
cheskikh i Matematicheskikh Nauk, No 1, 1973, pp 137-141

Abstract: This theoretical paper examines the basis for the study
of neutron relaxation in matter. This usually reduces to the de-
termination of various relaxation lengths, which are,in turn,de-
termined only by the characteristics of the medium rather than the
type of neutron source. From an examination of these lengths, in-
formation regarding the dispersion law of the medium is afforded
and theoretical models of the dispersion nuclei are checked. The
relaxation lengths are here defined as reciprocals of the discrete
eigenvalues of problems arising from the separation of variables
in the kinetic equation. These problems, in turn, involve eigen-
values for various integral equations whose kernels are second de-
rivatives of the dispersion cross section. Approximation methods
for calculating these lengths are given and their results evaluated.

1/1

USSR   UDC: 614.445:616-884:616.995.7 (479.24)

NADZHAFOV, A.YU. and ABDULLAYEV, KH.I.

"Sanitary Hydraulic Engineering and Its Role in Preventing Certain Diseases
and Controlling Blood-Sucking Insects in Azerbaydzhan"

Abstract: During field trips in 1967-1968 to different parts of Azerbaydzhan,
the authors found large bodies of water resulting from the failure to observe
sanitary regulations in the building, repair, and operation of hydraulic works
and from irrigation systems and reclamation projects. These new expanses
of water are epidemiological factors in the spread of malaria, leptospirosis,
tularemia and other water-borne infections. They also create favorable condi-
tions for helminthiases, tickborne spirochetosis, and other diseases.
Epidemic-control measures must be instituted at all the projects involving
water. The costs of prevention are far less than the economic losses pro-
duced by outbreaks of the diseases mentioned above.

1/1

USSR

UDC 616.986-036.22 (479.24)

ABDULLAYEV, Kh. I., and BAYRAMOVA, R. A.

"On the Results of Examination of the Construction Site of the Druzhba
Hydroengineering Complex for Ornithodorus Ticks -- the Carriers of
Tickborne Spirochetosis"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 10, 1971, pp 72-74

Abstract: A survey of the appearance of natural foci of tickborne spiro-
chetosis was carried out from 1967 to 1969 on the construction site of the
Druzhba Hydroengineering Complex, a major complex being erected jointly by
the Soviet Union and Iran on the Araks River. The purpose of the survey was
to develop suitable prophylactic measures.

During the period indicated, 143 burrows of various wild animals were de-
fected; in 34 of them the Acarina ticks which are the carriers of tickborne
spirochetosis were discovered -- 0. verrucosus and 0. alactagalis.

The results of experimental research shows that a significant number of the
ticks were natural carriers of spirochaetes, which are the agents of the
disease.

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USSR

ABDULLAYEV, Kh. I., Azerbaydzhanskiy Meditsinskiy Zhurnal, No 4, 1973, pp 65-70

migration, timely antimalaria measures, and so on. The author proposes prophylactic measures for timely prevention of the appearance of cases of malaria in populated points associated with its foci.

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UDC 615.036.03+614.2(479.24)

USSR

ABDULLAEV, Kh. I.

"On the Question of Organizing Antimalaria Measures in Populated Points Associated With Foci of Malaria"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 4, 1973, pp 65-70

Translation of Russian Abstract: As a result of a study of an analysis of the epidemiological situation with malaria during 1970-1971 in Kordinskiy, Agdzhabedinskiy, Agdamskiy, Zhdanovskiy, Agdashskiy, and other rayons, the author notes that tactical errors are often made by health agencies in the local areas when planning activities. First of all this refers to the fact that in organizing and carrying out prophylactic measures, even as in the malaria situation which have occurred in recent years in both the particular rayon and outside it, especially in neighboring rayons, are not analyzed deeply enough. As a result, in settlements which are closely associated with active foci of malaria preventive measures are done last of all and local transmission of malaria takes place in settlements which are free of the disease.

It is disclosed that re-establishment of malaria transmission in populated points associated with foci of the disease depends on a number of factors, namely: total area of permanent and temporary anophelogenic bodies of water, their remoteness from active foci, number of vectors, intensity of population

1/2

ABDULLAYEV, G. M., and BAGIROV, N. M., Department of Hematology and Blood Trans-
fusion, (Head Professor G. M. Abdullaev) stet Azerbaydzhan State Institute for
Advanced Training of Physicians imeni A. Aliev

"A Case of Lympholeucosis in a Patient Who Had Been in Prolonged Contact with
Ethylated Gasoline"

Abstract: Tetraethyl lead is a highly active substance which affects the medulla
and hematopoiesis. The literature contains considerable information on various
diseases caused by long-term exposure to the ethylating liquid used in gasoline.
A case history is presented of a locksmith who developed lympholeucosis as a re-
sult of exposure to ethylated gasoline. Four other cases of leucosis associated
with long-term exposure to ethylated were also observed. It was concluded that
chemical factors played an etiological role in all of the cases. Periodic check-
ups are necessary for workers in contact with gasoline containing tetraethyl lead
in order to ensure early detection of shifts in the hemopoietic apparatus.

1/1

USSR   UDC 547.26'118.07

ABDULLAYEV, G. K., GAYDAY, V. I., MAMEDOV, M. M.

"A Method of Making Hydroxybenzyl Ester of Phosphorous Acid"

Moscow,OTkrytiya, Izobreteniya, Primyshlennyye Obraztsy, Tovarnyye Znaki,
No 15, Apr 73, Author's Cortificate No 374322, Div C, filed 4 May 70, published
20 Mar 73, p 52

Translation: This Author's Certificate introduces: 1. A method of making
hydroxybenzyl ethers of phosphorous acid distinguished by the fact that
phenols are interacted with paraform and phosphorus trichloride at a
temperature from -10 to +80°C in an organic solvent with subsequent isolation
of the goal product by conventional methods. 2. A modification of this
method distinguished by the fact that the process is carried out in a medium
of methyl and ethyl alcohols, acetone, dioxane, or diethyl ether.

1/1

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1/2   031   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--DECOMPOSITION OF PARAMAGNETIC CENTERS IN SELENIUM -U-

AUTHOR-(04)-ABDULLAYEV, G.B., IBRAGIMOV, N.I., MAMEDOV, SH.V., IBADOV,
  A.KH.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 97-100

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ELECTRON PARAMAGNETIC RESONANCE, POTENTIAL DIFFERENCE,
  ACTIVATION ENERGY, SELENIUM, PARAMAGNETIC METAL, CRYSTAL DEFORMATION,
  BROMIE, IODINE, OXYGEN, THALLIUM, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1004   STEP NO--UR/0449/70/004/001/0097/0100

CIRC ACCESSION NO--AP0053924
                          UNCLASSIFIED

1/2   049   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--ON SENSITIZING RECOMBINATION CENTRES IN GASE SINGLE CRYSTALS -U-

AUTHOR-(04)-ABDULLAYEV, G.B., ALIYEVA, M.KH., BELENKIY, G.L., MAMEDOVA,
  A.Z.
CCUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 2, PP 571-576

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ELECTRON STRUCTURE, CRYSTAL LATTICE STRUCTURE, TIN, METAL
  COATING, SINGLE CRYSTAL, OPTIC PROPERTY, REACTION KINETICS, GALLIUM
  SELENIDE, PHOTOCCNDUCTIVITY, RECOMBUSTICN REACTION, CAPTURE CROSS
  SECTION

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0629   STEP NO--GE/0030/70/037/002/0571/0576

CIRC ACCESSICN NO--AP0107226
                         UNCLASSIFIED

USSR

that admixtures which are active in the crystalline state become inactive in the amorphous state. Under deoxygenization of polycrystalline hexagonal selenium the conductance at a given temperature reduces by a factor of 1000; i.e., is approximately 100 times greater than in the case of single crystalline selenium. This is attributed to two factors: (a) in the production of single crystals of selenium the selenium is cleaned of oxygen admixtures; and (b) oxygen atoms in polycrystalline samples, by reducing the intermolecular potential barriers, cause a growth in the mobility of current carriers during the motion of current carriers. The change in the electrical properties of single crystals of selenium under deoxygenization is attributed to the entry of oxygen atoms in the selenium lattice.

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USSR A UDC 537.311.1

ABDULLAYEV, G. B., Academician of the Academy of Sciences Azerbaydzhan SSR,
ALIYEV, G. M., MEKHTIYEVA, S. I., MAMEDALIYEVA, G. G., GADZHIYEV, Г. B.,
DZHALILOV, N. Z., and ABDINOV, D. Sh., Institute of Physics of the Academy of
Sciences Azerbaydzhen SSR, Baku

"On the Origin of Hole Conduction in Selenium"

Abstract: The type of conductivity of amorphous selenium with different degrees
of crystallinity and also of monocrystalline selenium before and after deoxygeni-
zation was studied to obtain information on the origin of its hole conduction
and to clarify the possibility of producing selenium with electron conduction.
It is noted that it has been previously assumed that oxygen atoms in selenium
cause its hole conduction by producing acceptor levels but that direct data
supporting this assumption is practically nill. It is stated that the elec-
trical properties of selenium are not associated with the presence of periodi-
city in the lattice but are basically determined by the short-range order; this
short-range order therefore determines the width of the forbidden zone and con-
sequently the concentration of natural free electrons and holes. Under amorphi-
zation of the material there occurs a grouping of atoms around the defects such

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USSR

their N over the wide range 10^{15}-10^{-17} cm^{-3}, the process of EPR signal broadening always begins at $T_{tr} \geqslant 500°C$. ΔH_m increased monotonically with time, reaching approximately 1 oe after 12 hours of exposure. The chain concentration as a function of temperature was also studied. An explanation is suggested for the increase in the concentration of paramagnetic centers with t_{tr}.

2/2

Electricity & Magnetism

ABDULLAYEV, G. B., IBRAGIMOV, N. I., and IBADOV, A. KH., Institute of Physics

"Paramagnetism of Selenium As Affected by Heat Treatment Time at Various Temperatures"

Abstract: A previous study by the authors considered the effect of heat treatment on the formation of paramagnetic centers in selenium with fixed treatment times. The present article describes results of a study of EPR absorption in selenium at various treatment temperatures $T_{tr} \leqslant 550^{\circ}C$ as a function of the treatment time (t_{tr}). Amorphous V-5 brand selenium was used for the study. It was found that the paramagnetic center concentration N increased with time at each T_{tr}, reaching a certain steady value at $t_{tr} \simeq$ 5 hr. This limiting value N_{max} is determined by T_{tr}. A study of variations in the width ΔH_m of the EPR signal with heat treatment time for various T_{tr} shows that up to $T_{tr} \leqslant 450^{\circ}C$ ΔH_m remains within 5-6 oe regardless of the treatment time. For an entire group of specimens, despite variations in

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USSR

ABDULLAYEV, G. B., et al, Izvestiya Akademii nauk Azerbaydzhanskoy SSR, Seriya
fiziko-tekhnicheskikh i matematicheskikh nauk, No. 4, 1970, pp 65-70

under illumination without external displacement is said to be direct support for
the injection mechanism for the origin of inductance. It was established that
the inversion voltage decreases almost linearly with an increase in the light
intensity.

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Crystals & Semiconductors

USSR

ABDULLAYEV, G. B., ISKENDER-ZADE, Z. A., AKHUNDOV, M. R., DZHAFAROVA, E. A.,
ALIKHANOVA, Sh. A., Institute of Physics

"Reactive Properties of Diffusion Silicon Barrier-Layer Cells"

Abstract: The reactive properties of diffusion silicon photocells in which a high level of injection was developed both by an external voltage and by illumination of the photocell by intense light in order to produce a high injection level on which the capacitance transforms into an inductance without the application of a constant external displacement by intense illumination or photoinjection are studied. An investigation of the barrier capacitance of p-Si barrier-layer cells at voltages 0-30 v, temperatures 273-370°K, and frequencies 5-600 kHz showed that the dependence of the capacitance on voltage is determined by a linear distribution of the electroactive admixture in the transition region with a concentration gradient $(7-9) \cdot 10^{20}$ cm^{-4}. It is shown that the capacitance of the cell under illumination and under the condition $\omega\tau \geq 1$ transforms into an inductance without external voltage. This transition of capacitance into inductance

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USSR

ABDULLAYEV, G. B. et al., IAN AzerbSSR, Seriya Fiz.-Tekhn. i Mat. Nauk,
Fiz. i Astron., No 1, 1971, pp 39-44

the specimen. In the case of tensile strain, the deformation curve at
20 ma has two linear segments with different slopes: the first at relative
deformations below $1.2 \cdot 10^{-4}$ relative unit, and the second (with greater
slope) from $1.2 \cdot 10^{-4}$ to $2.2 \cdot 10^{-4}$ relative units. Strain sensitivity in
the range from $5 \cdot 10^{-5}$ to $2 \cdot 10^{-4}$ unit of relative deformation is 1.5 times
as great for tension as for compression. Experiments with P-type lead
sulfide strain-sensitive resistors showed that specimens of this type made
by powder metallurgy methods have low resistance to mechanical and thermal
loading. Chlorine-doped pressed polycrystalline specimens of N-PbS are
thermally stable at temperatures up to $1000^{\circ}K$. Specimens tested under
various dynamic conditions withstood $2 \cdot 10^{6}$ cycles. Strain gauges based
on lead sulfide resistors can be used to measure relative deformations of
as little as 10^{-6} relative unit. Three figures, bibliography of seven
titles.

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PHYSICS

Crystals and Semiconductors

USSR

ABDULLAYEV, G. B., KULIYEV, A. Z., AGAYEV, A. I., ABDULLAYEV, E. A.,
KAKHRAMANOV, K. Sh., Institute of Physics, Academy of Sciences of the
Azerbaydzhan SSR

"N-Type Lead Sulfide Strain-Sensing Semiconductor Resistors"

Abstract: The authors study specimens of $PbCl_2$+Pb-doped lead sulfide
strain-sensing resistors with electron concentrations of $6.3 \cdot 10^{18}$/cc.
This dopant gives specimens with a high electron mobility. Contacts were
made by the galvanic method, thermal welding, and vaporization. The output
of the GZ-34 sonic generator was used as the source of supply. The signal
frequency was 2 kHz. A study was made of the effect of strain on the
current-voltage characteristic of a specimen. It was found that the slope
of this curve is a linear function of strain in the range of $2 \cdot 10^{-1} - 5 \cdot 10^{-4}$
relative units. Deformation curves show that the change in relative re-
sistance is practically linear and depends on the current flowing through

1/2

ABDULLAYEV G.B

Physics

ABDULLAYEV G.B

USSR

ABDULLAYEV, G. B., et al., Izvestiya Akademii Nauk Azerbaydzhanskoy SSR,
Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 100-113

on the selenium crystallization process and the structure of the resultant
material. In the molten state selenium is a structurized system, and the
growth of small crystals from such a melt may occur by the addition of
ordered aggregates of macromolecules.

3/3

USSR

ABDULLAYEV, G. B., et al., Izvestiya Akademii Nauk Azerbaydzhanskoy SSR,
Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 100-113

medium strong, and the rest weak. The optical density of bands at 20.4, 13.5,
and 16.0 microns is constant for all T_{tr}, while the T_{tr}-dependence of the op-
tical density of bands at 3.5, 4.6, and 9 microns is of an extremal character.

It was found for the first time that the degree of transmission (back-
ground) depends on T_{tr}. There are two types of background: 1) general back-
ground and (2) background increasing in the direction of the short-wave region
of the spectrum. The behavior of both backgrounds is of a regular character.
The likeliest cause of the appearance of background is the Tyndall effect.
General background may be due to scattering by large supramolecular formations,
the second background to the Rayleigh-Jeans mechanism. The previous temperature
history, along with the crystallization temperature, has a significant effect

2/3

USSR   UDC 535.34:539.213.27

ABDULLAYEV, G. B., MAMEDOV, SH. V., ABUTALYBOVA, Z. M., IBRAGIMOV, N. I., and
VOLCHENKOV, YE. YA., Institute of Physics, Academy of Sciences Azerbaydzhan
SSR

"On Some Peculiarities of IR Absorption of Amorphous Selenium"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-
Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 100-113

Abstract: The authors undertook to elucidate those peculiarities of the sele-
nium IR spectrum which are related to its preheat treatment. The initial
material was amorphous powdered selenium, purity 99.9999 percent (V-5). Three
series of samples were fabricated; viz., (1) from V-5 selenium evacuated to
$p \leq 10^{-4}$ mm Hg, (2) from selenium with 0.05 mol. percent I_2, and (3) from se-
lenium with 0.05 at. percent Tl. All samples underwent heat treatment in the
$280-700°$ C range. The IR spectra display bands at 3.5, 416, 9.0, 13.5, 16.0,
20.4 microns depending on T_{tr}, with the 20.4-micron band strongest, 13.5

1/3

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USSR

UDC 010.49

ABDULLAYEV, G. B., ANTONOV, V. B., BELEN'KIY, G. L., GUSEYNOV, D. T., NANI, R. KH., and SALAYEV, E. YU., Institute of Physics, Academy of Sciences Azerbaydzhan SSR

"Photoconductivity of $CdIn_2S_4$ Single Crystals, Recombination Scheme"

Abstract: A study of the photoelectric properties of $CdIn_2S_4$ single crystals under intrinsic excitation, thermostimulated conductivity, as well as the radiation spectrum of crystals under the action of fast electrons, enabled the authors to obtain information on the energy level spacing in the forbidden band of $CdIn_2S_4$ and to determine some recombination and trapping center parameters.

1/1

USSR

UDC[537.226+537.311.33]:[537+535]

ABDULLAYEV, G. B., and ISKENDER-ZADE, Z. A.

"Some Questions in the Physics of Electron-Hole Junctions"

Nekotoryye voprosy fiziki elektronno-dyrochnykh perekhodov (cf. English above),
Baku, "Elm," 1971, 246 pp, ill, 1 r. 30 k. (from RZh-Fizika, No 10, Oct 71,
Abstract No 10YE705K)

Translation: Contents of book. Chapter 1. Some Concepts of the Electrical
Conductivity of Semiconductors; Chapter II. Physical Processes in p-n Junc-
tions; Chapter III. p-n Junction-Type Semiconductor Devices. Bibliography.

1/1

- 66 -

USSR   UDC: 537.226.31:546:23

ABDULLAYEV, G. B., Corresponding Member of the Academy of Sciences,
USSR; IMANOV, L. M.; RASULOVA, M. A.

"Investigating   Dielectric Relaxation in Selenium"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, vol 28, No 5,
1972, pp 20-24

Abstract: Asserting that investigation of the dielectric character-
istics of semiconductors within broad limits of frequency and tem-
perature variation can turn up useful information concerning the
nature of weakly bonded charge carriers, the authors present the
results of their investigation into the dielectric relaxation of
partially crystallized selenium and selenium specimens doped with
thallium. The dielectric permeability and absorption factor of
the pure selenium were measured at five frequencies in the range
of 0.06 to 5.3 MHz and in the temperature interval of 20 to -100°C.
     The dielectric coefficients of the selenium doped with 0.01%
by weight of thallium were measured in the same temperature inter-
val at eight frequencies in the 0.06-16 MHz range. The measure-
ments were conducted by resonance methods with an error of less
than 5%. Results are given in tabular and curve form.

USSR

UDC 621.382.004:539.293

ABDULLAYEV, G. B., et al, Doklady Akademii Nauk Azerbaydzhanskoy
SSR, No 2, 1973, pp 17-21

Expressions are found for the current and voltage as functions of
the humidity, and the corresponding characteristics are plotted.

2/2

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ABDULLAYEV, G. B., Corresponding Member of the USSR Academy of
Sciences, GARIBOV, M. A., GADZHIYEV, N. D., and TALIBI, M. A.

"Selenium Moisture Element -- a New Form of Semiconductor Converter"

Abstract: This theoretical paper is concerned with selenium diodes
with p-n heterojunctions which are capable of producing an elec-
trical voltage in response to a moisture or humidity stimulus.
The voltage-moisture characteristic of such a device is similar
to that of photosensitive diodes responding to light. The pur-
pose of this paper is to obtain a fuller notion of the mechanism
producing this moisture emf. Experiments performed on such diodes
showed that the electrical effects of the moisture are the results
of processes in the electron-hole junction region. It is found
that, under the action of humidity, there is an imbalance of
electron-hole pairs on the n-layer side. All the holes originating
in the n-layer and arriving at the junction under the effect of
the contact field cross over to the p region; the electrons are
repelled by the contact field and remain in the n region.
1/2

SO: JPRS 58262
16 FEB 73

SELENIUM RESEARCH

An elementary conductor and one widely used in technology, selenium has long been an object of numerous investigations, but the unusual effects observed in it (especially those connected with electronic processes) remained unexplained until recent years. The fact is that investigators often did not take into consideration the structural peculiarities of selenium, the singleness of phase and degree of purity of the samples, the interaction of individual impurities in them, and concepts relating to classical strictly ordered semiconductors with a standard band were extended to selenium. As a result, the development of work on the control of the characteristics of instruments created on the basis of that element was slowed down and the industrial production of such instruments was held back. All this indicated the scientific and practical importance of study of the structure of selenium and of the complex of physical processes taking place in it. Such investigations, on the basis of contemporary theoretical concepts and with the use of the latest methods -- electronic, optical, and magnetic -- were started in 1945 in the Institute of Physics of the AS Azerbaydzhan SSR.

Much attention was given to the determination of the structure and molecular composition of various modifications and states of selenium and their changes as a function of temperature, magnetic and electric fields, illumination, radiation, impurities, etc. The principal thermodynamic parameters were estimated: the temperature and heat of fusion, the glass point, the yield point, the solidification temperature of both pure selenium and selenium containing various impurities, and the strength of the selenium-selenium bond, and methods of controlling the values of those characteristics have been explained.

PHYSICS
Crystals & Semiconductors

ABDULLAYEV, G. B., AKHUNDOV, G. A., AGAYEVA, A. A., SALMANOV, V. M., and
YAROSHETSKIY, I. D. -- Azerbaydzhan State University imeni S. M. Kirov, Baku,
and Physical-Technical Institute imeni A. F. Ioffe, USSR Academy of Sciences,
Leningrad

"Recombination Radiation in Solid Solutions Under Neodymium Laser Excitation"

Abstract: The studies were made with $GaS_x Se_{1-x}$, where x was varied from 0.05 to
0.80. The crystals were grown by slow cooling with a constant temperature
gradient; plane parallel sheets were then peeled off for testing at $T = 77°K$.
It was found that the two primary spectral bands, caused by the decay of free
excitons with the release of 1 and 2 optical phonons respectively, were displaced
smoothly with change in the crystal composition. Increasing the pumping power
narrowed the bands and sharply increased intensity at the maxima (by a factor of
W^n, where W is the pumping power and n varied from 4 to 7). The data indicates
the availability of laser radiation from these crystals over a range from 4850
angstroms to 6000 angstroms.

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USSR

ABDULLAYEV, G. B., et al, *Fizika i tekhnika poluprovodnikov*, vol 6, No 6, 1972, pp 1166-1168

In the case of InSe, it was found that the images on it may be strengthened through the use of physical developers.

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USSR   UDC: 621.315.59?
ABDULLAYEV, G. B., ALIYEVA, M. Kh., GORYACHEV, D. N., KAZIYEV,
F. N., PARITSKIY, L. G., and RYVKIN, S. M.

"Obtaining Photographic Images on Fine Films of Gallium and Indium
Selenides"

Abstract: This paper is a sequel to an earlier article by some of
the authors named above (D. N. Goryachev, et al, 4, 1970, p 1500)
published in the journal named above, in which the use of thin
films of lead selenides and sulphides for retaining photographic
images was discussed. In the present brief communication, the
possibility of getting photographic images on thin films of gal-
lium and indium selenides, of the lesser studied class of semi-
conductors of the $A^{III}B^{IV}$ type, is considered. To do this, use is
made of the dependence of the oxide reproduction process speed at
the semiconductor-electrolyte interface on the illumination the
semiconductor is exposed to. For the experiments described in
this article, polycrystals of p-type GaSe were used in films 0.6
to 0.8 μ thick as well as n-type InSe in films about one micron
thick, deposited on glass substrates by sputtering in a vacuum.
1/2

UNCLASSIFIED   PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0109970
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PYROLYSIS OF A DIESEL FUEL
    FRACTION, B. 253-354DEGREES, FREE OF AROMATIC HYDROCARBONS, WITH QUARTZ
    SAND AS HEAT CARRIER, WAS STUDIED IN A PILOT PLANT. A CORRELATION
    MATRIX WAS USED AS CRITERION FOR THE DEGREE OF ORTHOGONALITY OF THE
    DESIGN MATRIX. THE OPTIMAL OPERAT6NG CONDITIONS WERE DETD. BY MEANS OF
    2ND ORDER EQUATIONS.

ZZZZZZ.ZZZZZZ   UNCLASSIFIED

TITLE--DEVELOPMENT OF A MATHEMATICAL MODEL OF PYROLYSIS IN A REACTOR WITH
   A RISING FLOW OF HEAT CARRIER -U-

AUTHOR--ABDULLAYEV, F.M., ZAFERMAN, D.M., KORSH, B.S., MAZIN, M.B.,
   TMENOV, D.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL. 1970, 15(3), 40-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--CHEMICAL REACTOR, MATHEMATIC MODEL, PYROLYSIS, DIESEL FUEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/2038   STEP NO--UR/0065/70/015/003/0040/0042

CIRC ACCESSION NO--AP0109970
ZZZZZZZZZZZZZ   UNCLASSIFIED

USSR

ABDULLAYEV, G. B. et al., IAN AzerbSSR, Seriya Fiz.-Tekhn. i Mat. Nauk,
Fiz. i Astron., No 1, 1971, pp 39-44

the specimen. In the case of tensile strain, the deformation curve at
20 ma has two linear segments with different slopes: the first at relative
deformations below $1.2 \cdot 10^{-4}$ relative unit, and the second (with greater
slope) from $1.2 \cdot 10^{-4}$ to $2.2 \cdot 10^{-4}$ relative units. Strain sensitivity in
the range from $5 \cdot 10^{-5}$ to $2 \cdot 10^{-4}$ unit of relative deformation is 1.5 times
as great for tension as for compression. Experiments with P-type lead
sulfide strain-sensitive resistors showed that specimens of this type made
by powder metallurgy methods have low resistance to mechanical and thermal
loading. Chlorine-doped pressed polycrystalline specimens of N-PbS are
thermally stable at temperatures up to $1000°K$. Specimens tested under
various dynamic conditions withstood $2 \cdot 10^{6}$ cycles. Strain gauges based
on lead sulfide resistors can be used to measure relative deformations of
as little as 10^{-6} relative unit. Three figures, bibliography of seven
titles.

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USSR

ABDULLAYEV, G. B., KULIYEV, A. Z., AGAYEV, A. I., ABDULLAYEV, E. A.,
KAKHRAMANOV, K. Sh., Institute of Physics, Academy of Sciences of the
Azerbaydzhan SSR

"N-Type Lead Sulfide Strain-Sensing Semiconductor Resistors"

Abstract: The authors study specimens of $PbCl_2$+Pb-doped lead sulfide
strain-sensing resistors with electron concentrations of $6.3 \cdot 10^{18}$/cc.
This dopant gives specimens with a high electron mobility. Contacts were
made by the galvanic method, thermal welding, and vaporization. The output
of the GZ-34 sonic generator was used as the source of supply. The signal
frequency was 2 kHz. A study was made of the effect of strain on the
current-voltage characteristic of a specimen. It was found that the slope
of this curve is a linear function of strain in the range of $2 \cdot 10^{-1} - 5 \cdot 10^{-4}$
relative units. Deformation curves show that the change in relative re-
sistance is practically linear and depends on the current flowing through

1/2

UDC 577.4

USSR

ABDULLAYEV, D. A.

"Synthesis of Relay Devices for a Given Input Signal Sequence"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines -- collection of works), Moscow, Nauka Press, 1972, pp 121-127 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V381)

No abstract

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USSR

energy supplied by the ionizing particles η , since a Čerenkov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is η = 0.25,

CSO: 1862-W   - END -

3/3

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USSR

Joint operation of ionizing calorimeters and spark chambers is normally
difficult because of the need for high voltage on the calorimeter electrodes,
combined with the time lag of the input pulse from the spark chambers, amount-
ing to over 20 microseconds. This difficulty was avoided in the present
experiments by storing pulses in memory cells, with the subsequent input of
a high-voltage pulse of about 120 kv. Operation was controlled by a master-
pulse, prior to which all parts of the equipment were kept inoperative.

Results of 200 hours of the joint operation of a Čerenkov spectrometer
and ionizing calorimeter, with graphite used as the target, have been pro-
cessed so far. For analysis, showers with energy above 1.5×10^{11} ev were
selected, 130 of them having been observed. The ratio of charged to neutral
nucleons were determined and, from it, the fraction of charged pions of the
total nucleus-active stream of particles. The inelastic coefficient for the
formation of π^0-mesons was computed from the experiments related to the
interaction of neutral particles with nuclei of graphite.

It is concluded that the combination of ionizing calorimeter with
Čerenkov spectrometer of full absorption for the simultaneous determination
of energy of primary particles made it possible to determine the fraction of

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USSR   UDC 539.171.017

ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T.,
MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALIPOV, T. A., TILLAYEV, T.,
UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles
in the 10^{11} to 10^{12}-ev Energy Range"

Abstract: Experiments that were performed at the high-altitude test station
(3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the exper-
iments was to investigate the angle of arrival and the energy characteristics
of interactions of pions and nucleons with light and heavy nuclei at 2 x 10^{11}
to 2 x 10^{12} ev and the mechanism of generating muons at energies above 2 x 10^{12}
ev. Equipment consisted of spark chambers, located above and below the target
(paraffin wax, carbon, and iron), a Cerenkov spectrometer of full absorption,
and an ionization calorimeter. This complex method of measurements was found
convenient for use in various modes of operation. A detailed description of
various parts of the installation and their disposition is given in the paper.
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USSR

AZIMOV, S. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya,
Vol 36, No 8, Aug 72, pp 1626-1631

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$;
this shows that the proportion of charged particles is ~34% of all nuclear
active particles, thus making it possible to study pion-nuclear collisions
by comparing the characteristics of the interaction of charged and neutral
primary particles. A weak functional dependence between the inelasticity
coefficient $\langle K_{\pi^0} \rangle$ and the atomic number of the target nucleus and a strong
functional dependence between this coefficient and the nature of the
primary particles were obtained for interactions of hadron with $E_0 > 200$
Gev. $\langle n_s \rangle$ is almost a logarithmic function of E_0. The average multipli-
city in the interaction of pions with neutrons in paraffin is identical
within the experimental limit. A considerable azimuthal effect was ob-
served for the angular distribution of secondary particles. The azimuthal
effect has its greatest value for showers with $n_s = 8$-15, or a multipli-
city close to average.

2/2

AZIMOV, S. A., MYALKOVSKIY, V. M., NURITDINOV, Kh., KASYMOV, T. S.,
ABDULLAYEV, A. M., BEYSEMBAYEV, R. U., GAVRILIN, Yu. V., TALIM Y, D. A.,
MULLADZHONOV, E. Zh., TULLAYEV, T., KAKHAROV, Zh., USEROV, L.,
UMINOVA, F. A., KHEN, E., YULDASHBAYEV, T. S., Institute of Nuclear
Physics of the Academy of Sciences Uzbek SSR

"Study of the Characteristics of High-Energy Interactions of Pions and
Nucleons"

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude
Station of the Physicotechnical Institute of the Academy of Sciences
Uzbek SSR are reported. The station is 3200 m above sea level. The
setup contains three series of wide-gap spark chambers with effective
areas of 2 m^2 placed above and below the target. The Cerenkov spectro-
meter with total absorption and an ionization calorimeter with an area of
10 m^2 were used to measure the primary energy E_0. Up to the present time
experimental data obtained over 630 hours of operation of the device have
been processed, with a high-voltage pulse being supplied to the electrodes of
the spark chambers. Showers with an energy of > 200 Gev generated in the target
were selected for analysis. The following ratio was obtained for the number
1/2

USSR UDC 519.281

ABDULLAYEV, A. I.

"Certain Methods of Construction of the Demand Set Regression Equation"

Tr. Mosk. Ekon.-statist. In-ta [Works of Moscow Economics and Statistics Institute],
No 3, Part 2, 1970, pp 142-150, (Translated from Referativnyy Zhurnal, Kibernetika,
No 6, 1971, Abstract No 6 V182 by V. Granovskiy).

Translation: A description is presented of the following three methods of con-
struction of the demand set regression equation, used in economics: 1) the
method of successive approximations; 2) the method of conditional regression;
3) the method of homogeneous regression.

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USSR

ABDULLAYEV, A. I.

"Determination of Optimal Throughput Capacity of a Pier by Queueing Theory Methods, Considering Unexpected Failures of Loading Equipment"

Tr. Mosk. Ekon.-stat. In-ta [Works of Moscow Institute of Economics and Statistics], No 4, Part 1, 1971, pp 90-95, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V479).

NO ABSTRACT.

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USSR

ABDULLAYEV, A. I.

"Determination of the Mean Waiting Time of Ships in Port by Queueing Theory Considering Unexpected Failures of Loading Equipment and Inclement Weather Conditions"

Tr. Mosk. Ekon.-stat. In-ta [Works of Moscow Institute of Economics and Statistics], No 4, Part 1, 1971, pp 116-124, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V478).

NO ABSTRACT.

Acc. Nr:
AP0041897

Abstracting Service:
CHEMICAL ABST.

Ref. Code:
UR0080

85792u Effect of water vapor on the completeness of nitric acid regeneration during the thermal decomposition of aluminum nitrate nonahydrate. Abdullaev, A. B.; Ismatov, Kh. R. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 166-7 (Russ). During the thermal decompn. of $Al(NO_3)_3.9H_2O$, >99% of the N can be recovered as HNO_3 and N_2O_5. The decompn. is achieved best at 450° within 10 min in presence of H_2O vapor. In absence of H_2O, the nitrate tends to decomp. into nonrecoverable lower oxides of N. A. P. Mueller

USSR   UDC: 621.314.61

ABDULLAYEV, A. A.

"Investigation of the Effect of the Form of the Pulse Power of Thermal Losses on
Heating up of the Rectifying Junction of Diodes in Rectifier Circuits"

Translation: Current pulses of an arbitrary form, flowing through a semiconductor
rectifier [ventil'], are replaced during a computation by equivalent rectangular
pulses of the same duration and the same periodicity of the condition of isolation
of equal losses in the interval of current flow. Graphs are presented (for
various rectifier circuits) of the computed dependence of the average of the power
losses and the temperature of the junctions of VKDU-150 and D7Zh rectifiers, on
the control angle and the current magnitude, taking into account and not taking
account the pulse overheating. 4 ill. 3 ref. A. S.

1/1

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USSR   UDC 616.986.5-036.21(47)(091)

POSPELOVA-SHTROM, M. V. and ABDULKHASANOV, A. A., Institute of Medical
Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of
Health USSR, and Kyzyl-Kuysk Municipal Hospital (Kirgiz SSR)

"Origin of Village Foci of Tickborne Spirochetosis in the USSR"

Abstract: The source of village foci of tickborne spirochetosis in the USSR
has usually been regarded as local Ornithodorus ticks. However, the inability
of these ticks to travel considerable distances, the fact that their habits do
not coincide with the locations of the most widespread village foci of spiro-
chetosis, and the results of a recent thorough study of the taxonomy of these
arthropods cast serious doubt on the validity of this view. In its place, the
authors advance the theory that the disease was imported into Soviet Central
Asia (Western Pamirs and Southern Kirgizia) from neighboring parts of Iran and
Afghanistan via the historical caravan routes which date back about 2000 years.
Large-scale migrations of peoples, endless wars in the Pamirs and adjacent regions,
and the travels of pilgrims also helped to spread the tick.

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2/2   019   UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STAGES OF CONTROL OF ALECTOROBIUM
THOLOZANI TICK, VECTOR OF TICK SPIROCHETOSIS IN THE VILLAGE OF UCH
KORGON (SOUTHERN KIRGHIZIA) ARE ANALYZED. THE DRY METHOD OF TREATMENT
OF PREMISES AGAINST THIS TICK WAS FOUND INSUFFICIENT. MOIST TREATMETN
CARRIED OUT ACCORDING TO THE CURRENT "TEMPORARY INSTRUCTION FOR CONTROL
OF TICK RELAPSING FEVER' GIVES GOOD RESULTS, AS A RULE, AFTER 2-3
TREATMENTS. TREATMENT OF MICROFOCI OF THE DISEASE ALONE DOES NOT
ACHIEVE THE PURPOSE; IT IS NECESSARY TO INVESTIGATE ALL THE HOUSES OF
THE VILLAGE, AS WELL AS TO TREAT AGAINST TICKS ALL DETECTED POTENTIAL
FOCI OF TICK SPIROCHETOSIS. THE EFFECT OF ANTI TICK TREATMENTS WAS
FOUND TO BE STABLE AFTER 4 YEARS OR MORE.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--ON THE EFFECTIVENESS OF TREATMENT OF PREMISES WITH BHC AGAINST
   VILLAGE TICK ALECTOROBIUS THOLOZANI IN THE VILLAGE OF UCH KORGON -U-

AUTHOR--ABDULKHASANOV, A.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL
   39, NR 3, PP 363-365
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TICK, INSECT CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0233   STEP NO--UR/0358/70/039/003/0363/0365

CIRC ACCESSICN NO--AP0123995
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11DEC70

CIRC ACCESSICN NO--AP0135799
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPLENECTOMY WAS PERFORMED IN 55
PATIENTS WITH HEMOLYTIC ANEMIA, AND IN 41 IT WAS DONE FOR CONGENITAL
MICROSPHEROCYTIC HEMOLYTIC ANEMIA WITH GOOD IMMEDIATE OPERATIVE RESULTS.
IN 11 OF 14 PATIENTS WITH ACQUIRED AUTOIMMUNE FCRM OF HEMOLYTIC ANEMIA
IMMEDIATE RESULTS OF THE OPERATION WERE SATISFACTORY.   REMOTE OUTCOMES
OF SPLENECTOMY WERE STUDIED IN 40 PATIENTS. FOLLOWING SPLENECTOMY
CLINICAL RECOVERY IN PATIENTS WITH CONGENITAL HEMOLYTIC ANEMIA OCCURRED
IN 29 OUT OF 30 CASES. IN INSTANCES OF ACQUIRED AUTOIMMUNE HEMOLYTIC
ANEMIA SPLENECTOMY HELPED TO IMPROVE THE CONDITION OF THE PATIENTS,
WHILE SOME OF THEM DEMONSTRATED COMPLETE CLINICAL RECOVERY.   MAINTENANCE
THERAPY WITH CORTICOSTEROID HORMONES IS INDICATED POSTOPERATIVELY IN
PATIENTS WITH ACQUIRED AUTOIMMUNE FORM OF HEMOLYTIC ANEMIA PRESENTING
SYMPTOMS OF HEMOLYSIS AND CONTINUED POSITIVE COOMB'S TEST.
FACILITY: CLIN. SURG. HEMATOL., LENINGRAD RES. INST. HEMATOL. BLOOD
TRANSFUS., LENINGRAD, USSR.

UNCLASSIFIED